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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/902,277

07/09/2001

Gurtej S. Sandhu

MI22-1780

1605

21567

7590

04/21/2003

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EXAMINER

SCHILLINGER, LAURA M

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,277

Applicant(s)

SANDHU ET AL.

Examiner

Laura M Schillinger

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 51-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in Response to Paper No. 17, dated 4/8/03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

- (e) the invention was described in-
- ~~(i) an application for patent, published under section 122(b), by another filed in the United States before the~~
invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 51-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Tseng et al ('802).

In reference to claim 51, Tseng et al ('802) teaches a method comprising:

Forming a gate (Col.2, lines: 45-55)

Forming a polycrystalline TFT layer over the gate (Col.2, lines: 45-55)

Forming a fluorine containing layer proximate to the polycrystalline TFT layer, the fluorine layer comprising W (Col.2, lines: 45-55) and

Transferring F into the polycrystalline TFT layer from the F containing layer (Col.2-3, lines: 60-5).

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In reference to claim 52, Tseng et al ('802) teaches wherein the polycrystalline TFT comprises Si (Col.2, lines: 50-55).

In reference to claim 53, Tseng et al ('802) teaches wherein the forming a F containing layer comprises forming a sacrificial F containing layer over the TFT layer by CVD utilizing WF(6) and SiH(4) precursors (Col.2, lines: 55-60).

In reference to claim 54, Tseng et al ('802) teaches further comprising after the transferring F, removing the F-containing layer from over the TFT layer (Col.3, lines: 60-63)).

In reference to claim 55, Tseng et al ('802) teaches a method comprising:

Forming a gate (Col.2, lines: 45-55)

Forming a polycrystalline TFT layer over the gate (Col.2, lines: 45-55)

Forming a fluorine containing layer proximate to the polycrystalline TFT layer, the fluorine layer comprising W (Col.2, lines: 45-55);

Providing a buffering layer intermediate the TFT layer and the F containing layer (Col.3, lines: 15-25); and

Transferring F into the polycrystalline TFT layer from the F containing layer (Col.2-3, lines: 60-5).

In reference to claim 56, Tseng et al ('802) wherein the F-containing layer comprises W (Col.2, lines: 45-55).

In reference to claim 57, Tseng et al ('802) wherein the buffering layer comprises SiO₂ (Col.3, lines: 15-25).

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

~~Claim 58 recites wherein the polycrystalline thin film layer is germanium.~~ Although Germanium polycrystalline layers are well-known in the art of semiconductor technology, Tseng makes no suggestion to modify his teachings to include forming a germanium polycrystalline silicon layer rather than a polycrystalline silicon layer. Absent such a suggestion or teaching, claim 58 contains allowable subject matter.

Response to Arguments

Applicant's arguments filed 4/15/03 in Paper No.17 have been fully considered but they are not persuasive. Applicant argues that Tseng's teachings are aimed at migrating atoms through the polycrystalline layer into a gate oxide layer which is subsequently removed. Applicant argues that the claim language requires transferring fluorine into a polycrystalline layer from an overlying fluorine containing layer. However, Applicant's claim language does not require what Applicant's arguments suggest. Specifically, Applicant's claim language does not require that the fluorine layer be "overlying". Further Applicant's claim language does not require that the transferred fluorine remain within the polycrystalline film.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M Schillinger whose telephone number is (703) 308-6425. The examiner can normally be reached on M-T, R-F 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W Whitehead, Jr. can be reached on (703) 308-4940. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

LMS
April 15, 2003


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800